Program Description/Textbook or Print Instructional Material

Vendor:_ Key Curriculum Press_____

Web Address:_ www.keypress.com_____

Title: _ ***Discovering Algebra***: An Investigative Approach_____ _____

Author:_ Jerald Murdock, Ellen Kamischke and Eric Kamischke_ Copyright: ___2002_____

ISBN:_ 1-55953-340-4_____ Course/Content Area:_ Algebra 1_____ _ _

Intended Grade or Level: ___8-10_____ Readability Level: Dale-Chall: 5.2, Fry: 6.3
                                                                         Flesch-Kinkaid: 5.3_____

List Price:_ $48.45_____ Lowest Wholesale Price: _____$48.45_____

FEATURES

DISCLAIMER: The features of each book or program were developed by the publisher and do not reflect the opinion of the State Review Team, State Textbook Commission, nor of the Kentucky Department of Education.

Content

Chapter 0   Fractions and Fractals
Chapter 1   Data Exploration
Chapter 2   Proportional Reasoning and Probability
Chapter 3   Variation and Graphs
Chapter 4   Linear Equations
Chapter 5   Fitting a Line to Data
Chapter 6   Systems of Equations and Inequalities
Chapter 7   Exponents and Exponential Models
Chapter 8   Functions
Chapter 9   Transformations
Chapter 10   Quadratic Models
Chapter 11   Introduction to Geometry

Student Experiences

Discovering Algebra is a textbook that integrates graphing calculator technology that allows students to explore and investigate algebra–combining data exploration with modern, real-world applications. The technology allows students to look at situations from several different perspectives, and allows some to hurdle unproductive and error plagued paper-and-pencil barriers. Routine exercises become open-ended ongoing mathematical explorations often initiated by students.

Discovering Algebra helps students focus on the meaning of the numbers and expressions they enter and of the answers they generate. Finding meaning in numbers, variables, expressions, tables, and graphs is a year-long challenge for everyone.

Discovering Algebra students discover that learning algebra is more than just learning facts and theories and symbol manipulation. Many of the algebra textbooks that consider themselves innovative still rely on manipulation procedures that many students don't learn, can't make sense of, nor apply to a new situation. *Discovering Algebra* bridges the seemingly ever expansive gap between what algebra should be and what it is. The curriculum poses more questions than it attempts to answer; thus encouraging students to explore relevant ideas, and issues beyond the bounds of the course. The investigations allow students legitimate opportunities to experiment, hypothesize, measure, analyze, test, talk, write, explain, and justify their ideas.

Assessment
Because *Discovering Algebra* engages students as active learners, it provides ample opportunities to assess student learning throughout the course. Investigations provide opportunities for performance assessment. Journal-writing prompts are included in exercise sets. Exercises and other features can stimulate portfolio entries and presentations. Projects in the student text give students opportunities to demonstrate their learning in new contexts. Each chapter ends with Assessing What You Have Learned, a chance for students to write in their journals, organize their notebooks, update their portfolios, give a presentation or do a performance assessment.. *Assessment Resources A* and *Assessment Resources B* include quizzes, chapter tests, cumulative exams, constructive assessment options, answers, and rubrics for use with *Discovering Algebra*. Individual assessments can be created using the Test Generator and Workshop Builder.

Organization
SEE ABOVE

Resource Materials
NOT AVAILABLE

Gratis Items To Be Provided And Under What Conditions
1. *Discovering Algebra: Teachers Edition*

2. *Discovering Algebra: Solutions Manual*

3. *Discovering Algebra: Practice Your Skills Student Workbook*

4. *Discovering Algebra: Practice Your Skills Student Workbook w/ answers*

5. *Discovering Algebra: Teaching and Worksheet Masters*

6. *Discovering Algebra: Assessment Resources A*

7. *Discovering Algebra: Assessment Resources B*

8. *Discovering Algebra: Condensed Lessons for Make-up Work*

9. *Discovering Algebra: More Projects, Games, and Explorations*

10. *Discovering Algebra: Teaching Resources on CD*

11. *Discovering Algebra: Test Generator and Worksheet Builde*

12. *Discovering Algebra: (CD-ROM) Worksheet Builder*

   ▪   **All items above are provided 1 per 20 student textbooks purchased except item #11 which is provided one per teacher.**

Available Ancillary Materials

In addition to the above listed resources, Key Curriculum Press publishes a wide variety of supplemental resources and software useful to geometry teachers. Information on these materials is available in our catalog, or online at www.keypress.com.

RESEARCH DATA AND EVIDENCE OF EFFECTIVENESS

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NOT AVAILABLE

Program Description/Textbook or Print Instructional Material

Vendor: Key Curriculum Press

Web Address: www.keypress.com

Title: **Discovering Geometry: An Inductive Approach**

Author: Michael Serra   Copyright: 2003

ISBN: 1-55953-459-1   Course/Content Area: Geometry

Intended Grade or Level: 9-12   Readability Level: Dale-Chall: 7.9; Fry: 7; Harris-Jacobson: 8.3

List Price: $50.96   Lowest Wholesale Price: $50.96
FEATURES

DISCLAIMER: The features of each book or program were developed by the publisher and do not reflect the opinion of the State Review Team, State Textbook Commission, nor of the Kentucky Department of Education.

Content
Chapter 0: Geometric Art
Chapter 1: Introducing Geometry
Chapter 2: Reasoning in Geometry
Chapter 3: Using Tools of Geometry Lesson 3.1: Duplicating Segments and Angles
Chapter 4: Triangle Properties Lesson 4.1: Triangle Sum Conjecture
Chapter 5: Discovering and Proving Polygon Properties Lesson 5.1: Polygon Sum Conjecture
Chapter 6: Discovering and Proving Circles and Properties Lesson 6.1: Discovering Chord Properties
Chapter 7: Transformations and Tessellations Lesson 7.1: Transformations and Symmetry
Chapter 8: Area
Chapter 9: Pythagorean Theorem
Chapter 10: Volume
Chapter 11: Similarity
Chapter 12: Trigonometry Lesson 12.1: Trigonometric Ratios
Chapter 13: Geometry as a Mathematical System Lesson 13.1: The Premises of Geometry

Student Experiences
Discovering Geometry is a book for "doers." Students actually create geometry for themselves as they move through the activities and problems in the text. The text is consistent with current research in the development of geometric thinking, especially the model advocated in the van Hiele five-step approach to geometry education. The concepts to be used in proofs are developed slowly as students work through the text. Students first master geometric concepts and relationships. They develop visual thinking and critical thinking skills. Students use inductive reasoning side by side with deductive reasoning. They make conjectures and test their ideas. Students learn to follow algebraic, paragraph, and flowchart proofs. No other book develops such appreciation and understanding of the proof process.

Assessment

Because *Discovering Geometry* engages students as active learners, it provides ample opportunities to assess student learning throughout the course. Investigations provide opportunities for performance assessment. Journal-writing prompts are included in exercise sets. Exercises and other features can stimulate portfolio entries and presentations. Projects in the student text give students opportunities to demonstrate their learning in new contexts. Each chapter ends with Assessing What You Have Learned, a chance for students to write in their journals, organize their

notebooks, update their portfolios, give a presentation or do a performance assessment.Individual assessments can be created using the Test Generator and Workshop Builder. The *Discovering Geometry Teacher's Edition* also contains suggestions for assessment.

Lastly, the problem sets, Chapter Reviews, and Take Another Look reviews, allow for student self-assessment.

Organization

SEE ABOVE

Resource Materials
NOT AVAILABLE

Gratis Items To Be Provided And Under What Conditions

1. *Discovering Geometry: Teachers Edition*

2. *Discovering Geometry: Solutions Manual*

3. *Discovering Geometry: Practice Your Skills Student Workbook*

4. *Discovering Geometry: Practice Your Skills Student Workbook w/ answers*

5. *Discovering Geometry: Teaching and Worksheet Masters*

6. *Discovering Geometry: Assessment Resources A*

7. *Discovering Geometry: Assessment Resources B*

8. *Discovering Geometry: Condensed Lessons for Make-up Work*

9. *Discovering Geometry: More Projects, Games, and Explorations*

10. *Discovering Geometry: Discovering Geometry with The Geometer's Sketchpad (Includes CD)*

11. *Discovering Geometry: Geometer's Sketchpad Demonstrations (Includes CD)*

12. *Discovering Geometry: Teaching Resources on CD*

13. *Discovering Geometry: Test Generator and Worksheet Builder*

14. *Discovering Geometry: (CD-ROM) Worksheet Builder*

Discovering Geometry is a text that integrates the latest in education technology. Many investigations, activities, and projects in the text provide students with the option of using technology. Algebra applications throughout the text ask the student to use a graphing calculator for exploration. Similarly, students are asked to conduct various investigations with the option of using *The Geometer's Sketchpad*, Key Curriculum Press' extraordinary dynamic geometry software program for Windows or Macintosh platforms.

The Geometer's Sketchpad is often used to supplement *Discovering Geometry*. Accordingly, we've included within the teacher support materials a volume called *Discovering Geometry with The Geometer's Sketchpad*, which correlates investigations and projects in *Discovering Geometry* with a discovery activity in *Sketchpad*. Students explore the relationships defined by their constructions, and the dynamic nature of *Sketchpad* allows them to make conjectures based on the validity of these findings for all possible figures. Even schools that don't have *Sketchpad* will be able to successfully use a special, custom disk of *Sketchpad* activities (in both Windows and Macintosh formats) which allows students to experience the power of *Sketchpad* in the classroom and do a variety of activities.

- **All items above are provided 1 per 20 student textbooks purchased except item #13 which is provided one per teacher.**

Available Ancillary Materials

In addition to the above listed resources, Key Curriculum Press publishes a wide variety of supplemental resources and software useful to geometry teachers. Information on these materials is available in our catalog, or online at www.keypress.com.

RESEARCH DATA AND EVIDENCE OF EFFECTIVENESS

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NOT AVAILABLE

Program Description/Textbook or Print Instructional Material

Vendor: Key Curriculum Press

Web Address: www.keypress.com

Title: **Advanced Algebra Through Data Explorations**

Author: **Jerald Murdock, Ellen Kamischke and Eric Kamischke** Copyright: 2003

ISBN: 1-55953-225-4   Course/Content Area: Algebra 2

Intended Grade or Level: 9-12   Readability Level: Dale-Chall: 8.6; Fry: 8; Harris-Jacobson: 9.1

List Price: $47.65   Lowest Wholesale Price: $41.17

FEATURES

DISCLAIMER: The features of each book or program were developed by the publisher and do not reflect the opinion of the State Review Team, State Textbook Commission, nor of the Kentucky Department of Education.

Content

Chapter 0	Introducing the Calculator
Chapter 1	Patterns and Recursion
Chapter 2	Sequences and Explicit Formulas
Chapter 3	Introduction to Statistics
Chapter 4	Data Analysis
Chapter 5	Functions
Chapter 6	Parametric Equations and Trigonometry
Chapter 7	Exponential and Logarithmic Functions
Chapter 8	Topics in Discrete Mathematics
Chapter 9	Systems of Equations
Chapter 10	Polynomials
Chapter 11	Probability and Statistics
Chapter 12	Functions and Relations
Chapter 13	Trigonometric Functions

Student Experiences

Advanced Algebra helps students realize the value of learning mathematics by working with real data, real-life situations, and real-world applications. In line with the NCTM Standards, *Advanced Algebra Through Data Exploration* moves away from the traditional rule-dominated, symbol oriented, and manipulation-based algebra textbook, to an activity and experiment-based algebra. Using a graphing calculator, students instead explore problems, ideas, and concepts from different perspectives in a learning environment that encourages a spirit of exploration and conjecture. Students are doing advanced algebra through data exploration! The graphing calculator gives students the computational and visual power necessary to grasp and solve difficult real-world problems in an interesting and worthwhile way.

In our rapidly changing data-driven, technologically rich society students need to learn and understand a wide variety of mathematical topics and skills. *Advance*d *Algebra Through Data Exploration* explores recursively defined routines, parametric representations, statistics, data analysis, dynamic simulations, modeling functions, chance and variation, random process simulations, Markov processes, matrices, and other discrete topics.

The concept of sequence, for example, is not just given the usual symbolic definition as seen in most traditional algebra texts. Graphing technology allows the student a deeper understanding of the mathematics that lie behind this algebraic concept. In *Advanced Algebra*, the concept of sequence is intuitively presented as a pattern that is

recursively generated. Recursive routines defining sequences are computable functions programmable on a computer. Since the graphing calculator is a hand-held computer that facilitates programming, students will come to understand sequences through a thorough understanding of recursive programs. This approach is followed throughout *Advanced Algebra*. The student comes to understand the concepts of algebra by a deeper understanding of the mathematics involved—insights only graphing technology can bring!

Assessment
Assessments, both traditional and alternative, are fully developed in the text. Each chapter concludes with a student self-assessment section called Assessing What You've Learned, which allows students to:
- create portfolios for their project work,
- summarize their learning in journals,
- organize definitions and conjectures in their notebooks,
- develop other good assessment and study habits.

Also, for every chapter there is a chapter review which includes a summary of what a student should know upon completing the chapter. Many investigations in *Advanced Algebra* are followed by a section called Take Another Look. This section provides additional opportunities for student assessment, as well as oportunities for enrichment

Extensive tests and quizzes are provided as part of the teacher resources. Teacher materials also contain a comprehensive discussion of alternative assessment, including rubrics and suggestions.

Organization
SEE ABOVE

Resource Materials
NOT AVAILABLE

Gratis Items To Be Provided And Under What Conditions
•Teacher's Guide and Answer Key

•Solutions Manual

•Teacher's Resource Book

•Quizzes, Tests, and Exams

•Practical Steps Toward Constructive Assessment

•Blackline Masters for Calculator Notes

Keystroke and programming notes for various calculators for use with the textbook. Calculators covered include:

*Texas Instruments TI-80/81

*Texas Instruments TI-82/83

*Texas Instruments TI-85/86

*Texas Instruments TI92

▪ **All items above are provided 1 per 20 student textbooks purchased**

Available Ancillary Materials

In addition to the above listed resources, Key Curriculum Press publishes a wide variety of supplemental resources and software useful to geometry teachers. Information on these materials is available in our catalog, or online at www.keypress.com.

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NOT AVAILABLE

Program Description/Textbook or Print Instructional Material

Vendor: Key Curriculum Press_____

Web Address: www.keypress.com_____

Title: __ **Calculus Concepts and Applications Student Text** _____ _____

Author: **Paul A. Foerster**_____Copyright: ___1997_

ISBN: __1-55953-117-7_____   Course/Content Area:__ Calculus / AP Calculus_____

Intended Grade or Level: ___11-12_____   Readability Level:_____

List Price: __$62.50_____   Lowest Wholesale Price: _____$50.55_____

FEATURES
DISCLAIMER: The features of each book or program were developed by the publisher and do not reflect the opinion of the State Review Team, State Textbook Commission, nor of the Kentucky Department of Education.

Content
Chapter 1   Limits, Derivatives, Integrals, and Integrals
Chapter 2   Properties of Limits
Chapter 3   Derivatives and Indefinite Integrals
Chapter 4   Products, Quotients, and Parametric Functions
Chapter 5   Definite and Indefinite Integrals
Chapter 6   The Calculus of Exponential and Logarithmic Functions
Chapter 7   The Calculus of Growth and Decay
Chapter 8   The Calculus of Plane and Solid Figures
Chapter 9   Integration and Differentiation Techniques for Elementary Functions
Chapter 10   The Calculus of Motion, Maximums, Minimums, and Averages
Chapter 11   The Calculus of Variable-Factor Products
Chapter 12   The Calculus of Functions Defined by Power Series and Definite Integrals
Chapter 13   Linear Differential Equations

Student Experiences
Calculus: Concepts and Applications is a calculus textbook written specifically for AP calculus by a high-school teacher. Author **Paul Foerster** brings over thirty years of experience in the high school mathematics classroom to this brand new approach to calculus. Developed specifically with the high school student in mind, *Calculus: Concepts and Applications* takes full advantage of graphing technology to make calculus come alive. This forms a departure from the many calculus textbooks on the market today which are either retreads of books that have been around since the days of the slide rule or are watered-down versions of college texts. Paul Foerster has ingeniously combined graphing technology with a unique application-oriented approach. This is another departure from traditional textbooks which have viewed calculus as a set of algebraic manipulations to be mastered and then applied in contrived settings. Instead, *Calculus: Concepts and Applications* takes a modern approach, as advocated by proponents of calculus reform, which truly makes it *the* calculus textbook in this era of reform.

In *Calculus: Concepts and Applications* each concept is developed through graphical, algebraic, and numerical methods. Students are encouraged throughout the text to find numerical approximations, to verify conjectures by graphing, and to justify results algebraically. This three-pronged approach leads to a deeper conceptual understanding than is found in traditional calculus textbooks. The use of graphing technology, which is fully integrated throughout, makes it easy to work back and forth among these three approaches.

Assessment

The student text and support materials provide teachers with ample opportunities to assess student learning. These opportunities include a journal in which students express in their own words, what they have learned and what questions they have; concepts problems; project problems; experiments; sample tests; explorations; and "Do These Quickly" problems. Supplemental Resources for projects, graphing calculator activities, laboratories, problems and suggestions for research papers are listed in the Annotated Resource Guide of the ***Instructor's Guide***.

In addition, the ***Instructor's Resource Book*** contains a comprehensive discussion of assessment including Monitoring Student's Progress, Making Instructional Decisions, Evaluating Students' Achievement, Evaluating Programs, and Major Shifts in Assessment Practice

Organization

Through teaching in his own classroom, Paul Foerster has developed a new and effective sequence of topics. In *Calculus: Concepts and Applications*, students begin doing calculus on page 1. The concept of area under a curve, including the trapezoid rule, is introduced in Chapter 1 and students explore the relationship between differentiation and integration throughout the text. For ease of teaching, Chapters 1 through 10 cover material for the AB advanced-placement course; Chapters 11 and 12 provide the additional topics needed for the BC course.

Resource Materials

NOT AVAILABLE

Gratis Items To Be Provided And Under What Conditions

Calculus: Concepts and Applications includes an extensive teacher support package to make teaching calculus easy.

Solutions Manual
Instructor's Guide and Answer Key
Instructor's Resource Book

All of the above listed teacher materials are provided at no cost in the ratio of 1:20 student texts purchased.

Available Ancillary Materials

In addition to the above listed resource materials, Key Curriculum Press publishes a wide variety of supplemental resources and software that will interest and assist precalculus teachers. Information on these materials is available in our catalog, or online at:

www.keypress.com

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NOT AVAILABLE

Program Description/Textbook or Print Instructional Material

Vendor: Key Curriculum Press

Web Address: www.keypress.com

Title: __**Precalculus Concepts and Applications Student Text**__

Author: **Paul A. Foerster**   Copyright: 2003

ISBN: 1-55953-391-9   Course/Content Area: Pre-Calculus

Intended Grade or Level: 10-12   Readability Level:

List Price: $59.95   Lowest Wholesale Price: $59.95

FEATURES

DISCLAIMER: The features of each book or program were developed by the publisher and do not reflect the opinion of the State Review Team, State Textbook Commission, nor of the Kentucky Department of Education.

Content

Outline of Contents

Chapter 1   Functions and Mathematical Models
Chapter 2   Periodic Functions and right Triangle Problems
Chapter 3   Applications of Trigonometric and Circular Functions
Chapter 4   Trigonometric Function Properties, Identities, and Parametric Functions
Chapter 5   Properties of Combined Sinusoids
Chapter 6   Triangle Trigonometry
Chapter 7   Properties of Elementary Functions
Chapter 8   Fitting Functions to Data
Chapter 9   Probability, and Functions of a Random Variable
Chapter 10   Three-Dimensional Vectors
Chapter 11   Matrix Transformations and Fractal Figures
Chapter 12   Analytic Geometry of Conic Sections and Quadric Surfaces
Chapter 13   Polar Coordinates, Complex Numbers, and Moving Objects

Chapter 14   Sequences and Series ; Chapter 15 Polynomial and Rational Functions, Limits, and Derivatives
Appendix A   Kinds of Numbers, Axioms, and Other Properties; Appendix B   Mathematical Induction
Glossary ; Index of Problem Titles; General Index
Answers to Selected Problems

<u>**Student Experiences**</u>
Precalculus: Concepts and Applications is new precalculus textbook written specifically for high school students by a noted high-school teacher. Author **Paul Foerster** brings over thirty years of experience in the high school mathematics classroom to this appealing and effective approach to precalculus. Students in this course take full advantage of graphing technology—learning that variables really vary. Students use the law of cosines to model the position of an orbiting satellite, for example, rather than simply to analyze a fixed triangle. They fit functions to data, spiraling back to recurring themes like outer space, sports, music, aviation, automobiles, and finance as their mathematical maturity develops.

Technology gives students access to new topics such as harmonic analysis of complex wave patterns, logistic functions for restricted population growth, and iterated matrix transformations for generating fractal figures. Standard topics come alive as students verify trigonometric identities graphically and numerically, as well as by traditional algebraic methods.

<u>**Assessment**</u>
The student text and support materials provide teachers with ample opportunities to assess student learning. These opportunities include a journal in which students express in their own words, what they have learned and what questions they have; concepts problems; project problems; experiments; sample tests; explorations; and "Do These Quickly" problems. Supplemental Resources for projects, graphing calculator activities, laboratories, problems and suggestions for research papers are listed in the Annotated Resource Guide of the ***Instructor's Guide***.

In addition, the ***Instructor's Resource Book*** contains a comprehensive discussion of assessment including Monitoring Student's Progress, Making Instructional Decisions, Evaluating Students' Achievement, Evaluating Programs, and Major Shifts in Assessment Practice

<u>**Organization**</u>

SEE ABOVE

<u>**Resource Materials**</u>
NOT AVAILABLE

<u>**Gratis Items To Be Provided And Under What Conditions**</u>
Precalculus with Trigonometry comes with the following comprehensive resources to support teachers:

Instructor's Guide—provides an overview, regular and block schedule planning guides, suggestions for cooperative learning strategies, a bibliography of precalculus resources, additional problems, and chapter-by-chapter lesson guides with commentary.

Instructor's Resource Book Volume 1—included a complete set of **Explorations**, designed to give students hands-on experience with a new topic before it is formally introduced, and to give teachers the option of presenting materials with an investigative approach. This resource also includes an overview, transparency masters, assessment suggestions, additional topics, chapter tests, midyear and final exams, solution for tests and exams, calculator programs, and data sets.

Instructor's Resource Book Volume 2—offers supplementary precalculus topics and suggestions for projects using the CBL™, The Geometer's Sketchpad®, software, and Fathom Dynamic Statistics™ software.

Instructor's Resource CD-ROM—contains chapter tests, midyear and final exams, solution for tests and exams, calculator programs, and data sets.

All of the above listed teacher materials are provided at no cost in the ratio of 1:20 student texts purchased.

Available Ancillary Materials

In addition to the above listed resource materials, Key Curriculum Press publishes a wide variety of supplemental resources and software that will interest and assist precalculus teachers. Information on these materials is available in our catalog, or online at:

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NOT AVAILABLE